

Partnership with UMC and its values for Customers

Mie Fujitsu Semiconductor Limited (MIFS)
President
Haruyoshi Yagi

Corporate Profile

Company Name	Mie Fujitsu Semiconductor Limited
Establishment	December 1, 2014
Capital	7.5 Billion JPY
Employees	850
Revenue	85~90 Billion JPY (FY2015 forecast)
Shareholders	Fujitsu Semiconductor, UMC

Akiruno Office



PDK Support
(Akiruno, Tokyo)

Kozoji Office



Design Support
(Kasugai, Aichi)

Mie Fab



Manufacturing
Process Development
(Kuwana, Mie)

Shin-Yokohama Chuo Building



Head Quarter
(Shin-Yokohama,
Kanagawa)

Mie 300mm Fab Outlook

	Fab B1	Fab B2
Start of Operation	2005	2007
Total Floor Area	38,000m ²	80,000m ²
Wafer Size	300mm	
Process Technology	40nm, 55nm, 65nm, 90nm	
Production Capacity	35,000 wafers/month (planning +5,000w/m)	
Certification	ISO9001, ISO14001, ISO/TS16949	
Major Features	Earthquake-proof Construction, LNG Gas Satellite Base, NAS Batteries Installation	



For customer's business continuity

Electrical power shortage

- NAS battery system
- Dual supply line
- Emergency power generator for CR support

Earthquake

- Hybrid earthquake proof Structured Fab (Seismic Isolation systems)



LNG pipeline discontinuity

- LNG Satellite Base

Manufacturing Back-up

- Independent operational fab, (B1 & B2 fab)
- UMC fab

To reduce Power & Fuel supply risk

NAS battery system for power failure

- Instantaneously compensate voltage drop
- 3000KVA x 7 systems to support whole fab for 16 seconds



Dual independent power supply lines

- Switch to another line automatically when failed within 2 seconds. Meanwhile, NAS battery system can run the whole fab.



LNG satellite base

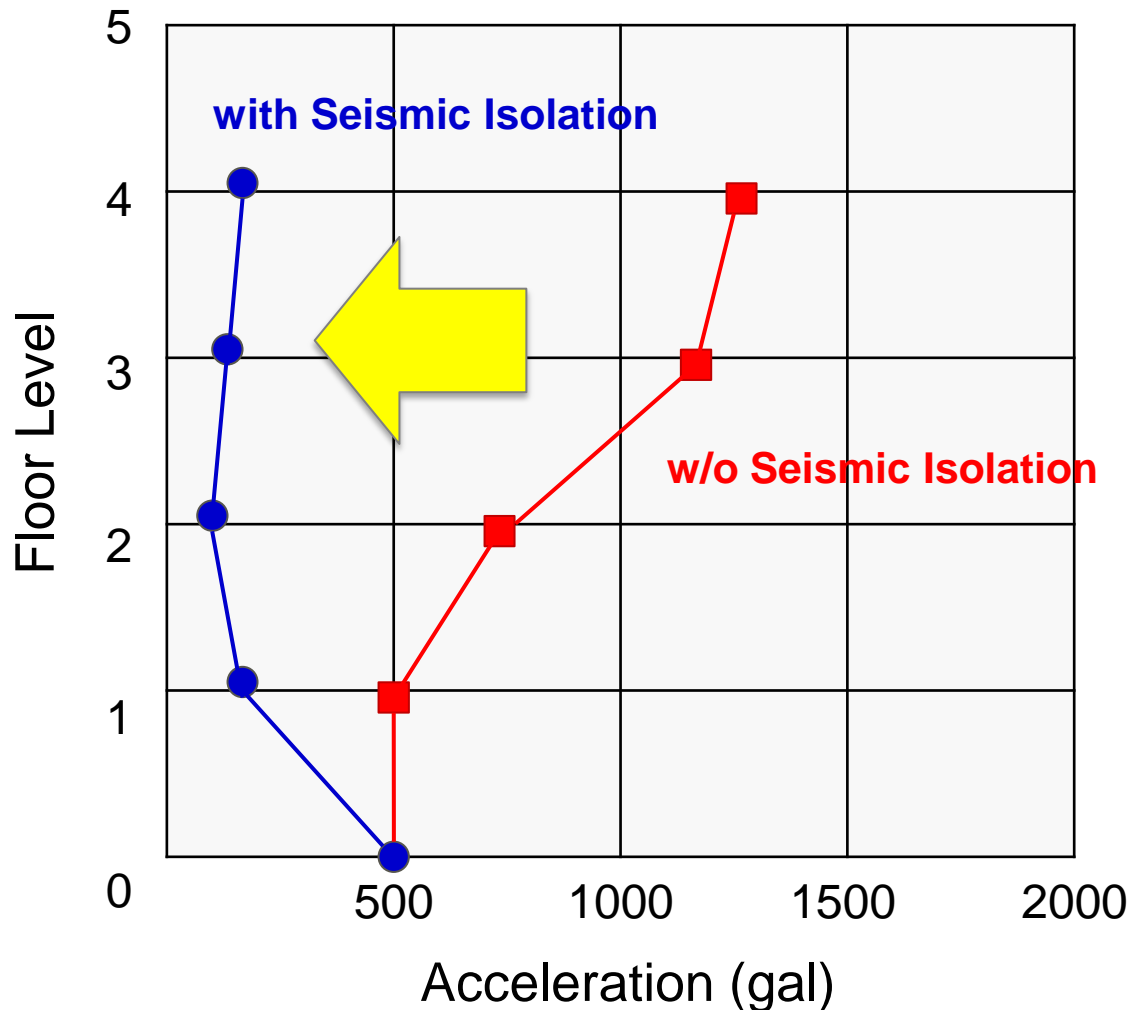
- Maintain CR conditions for 72 hours when LNG pipeline is disabled.



LNG Satellite Base

Effect of Seismic Isolation systems

Acceleration of 500 gal at ground level can be reduced by Max.90%



Laminated Rubber Supports



Solid Sliding Supports



Oil Damper

UMC and MIFS Partnership

■ Since 2011

Fujitsu Semiconductor (FSL) has outsourced its 65nm products to UMC since 2011.

■ August, 2014

UMC and FSL entered into “Joint Venture Agreement” and “40nm Technology Transfer and License Agreement”.

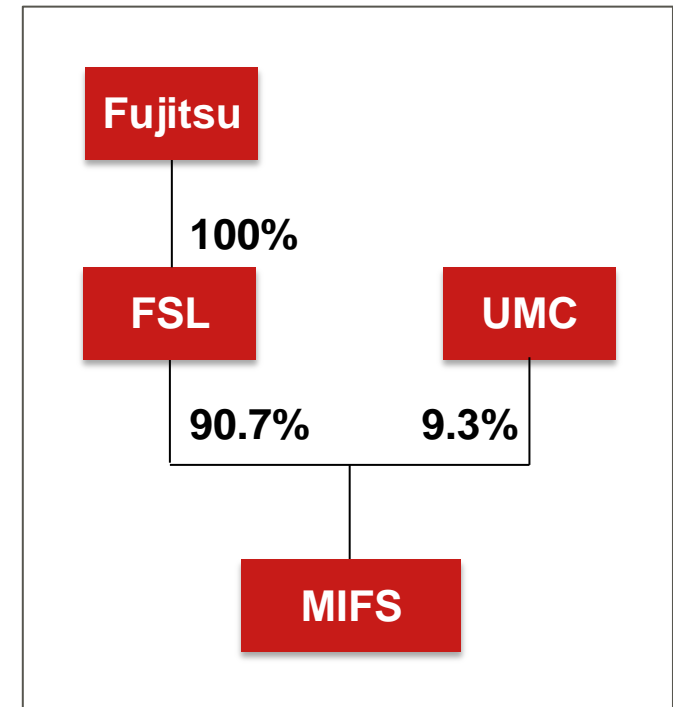
■ December, 2014

Mie Fujitsu Semiconductor (MIFS) was established as 100% subsidiary of FSL and succeeded the 40nm license agreement from FSL.

■ March, 2015

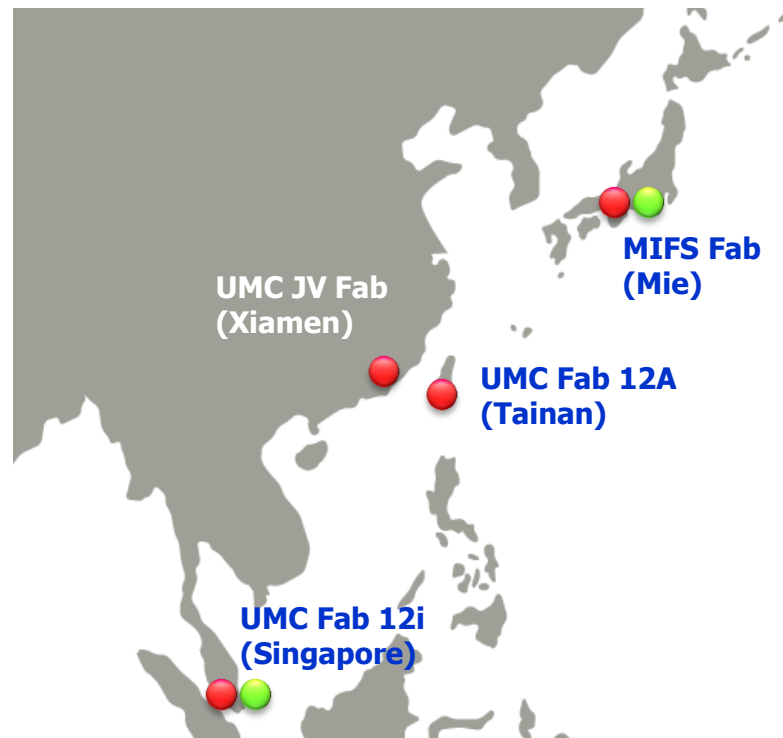
UMC become 9.3% shareholder of MIFS.

Current Structure
(June, 2015)

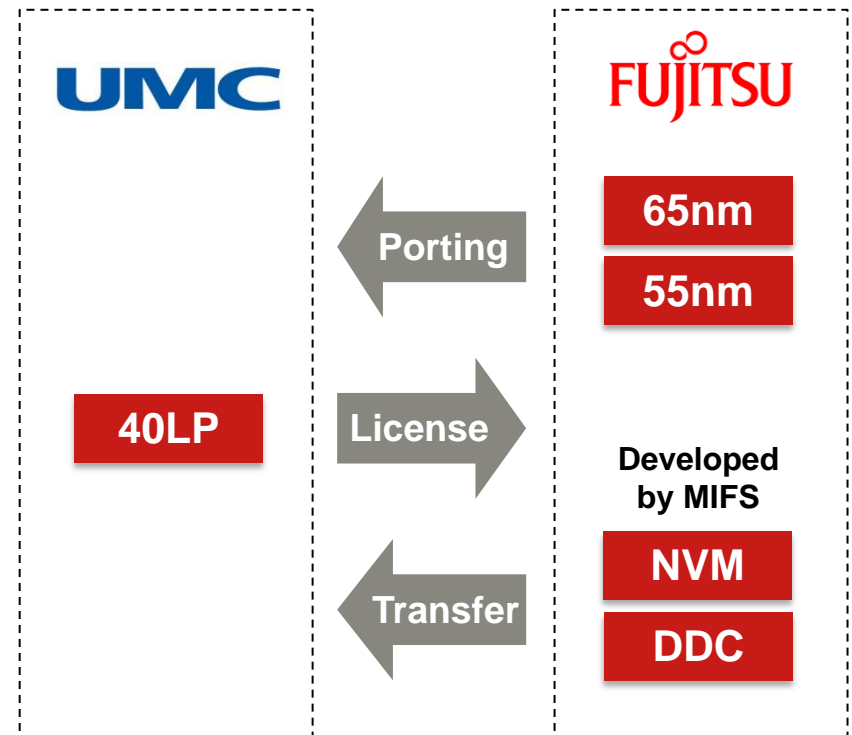


What does MIFS and UMC partnership bring to customers?






























- **Manufacturing Options** (for Large volume business, BCM)
- **Wide-range Technologies** (for IoT/Wearable products, Automotive)



- UMC 40nm Technology
- Fujitsu 55/65nm Technology



Mie Technology Line-up

5/15v HV									
5/(8)v LDMOS									
eNVM	Std. Flash								
	Plug-In								
	MTP/OTP								
RF									
Logic									
		HP	LP	HP	LP	LP	DDC	LP	ULP
		90nm		65nm		55nm		40nm	



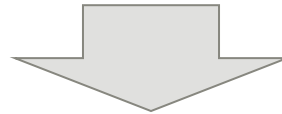
Production



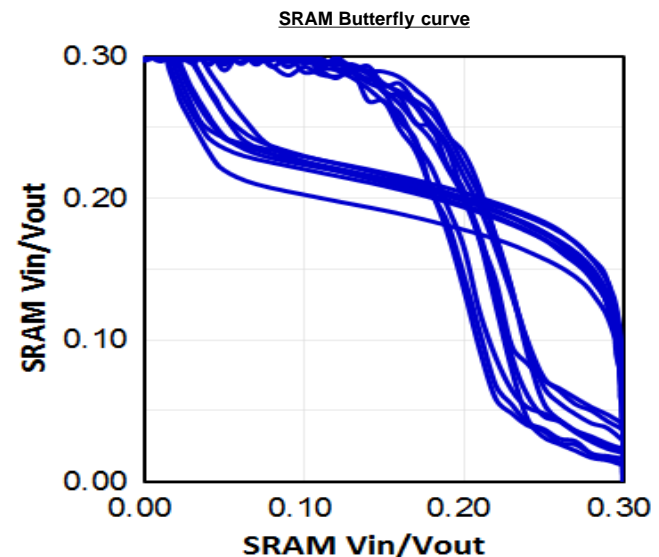
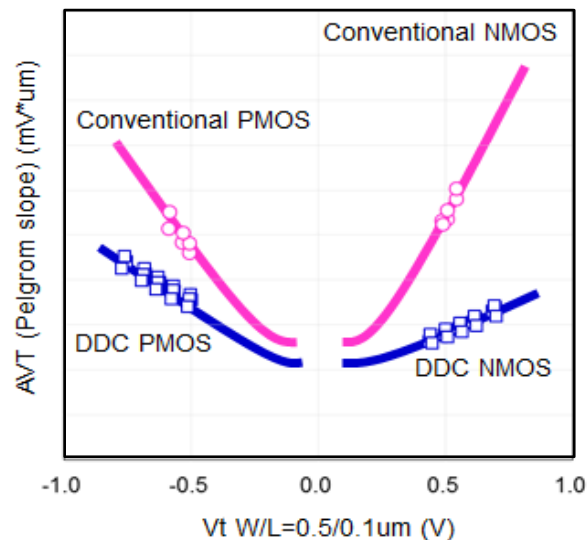
Developing

Deeply Depleted Channel (DDC™) Technology

Same speed with half power for mobile application

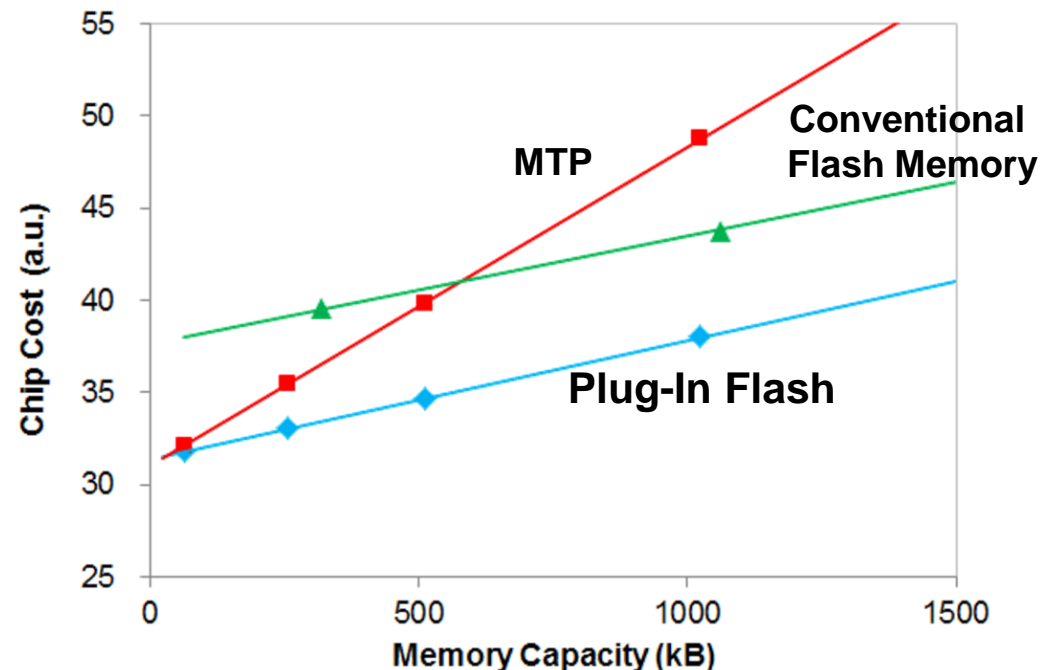


Ultra low leak I_r at reduced V_{dd}
for IOT & wearable applications, ultimately without battery



New Embedded NVM = Plug-In Flash Technology

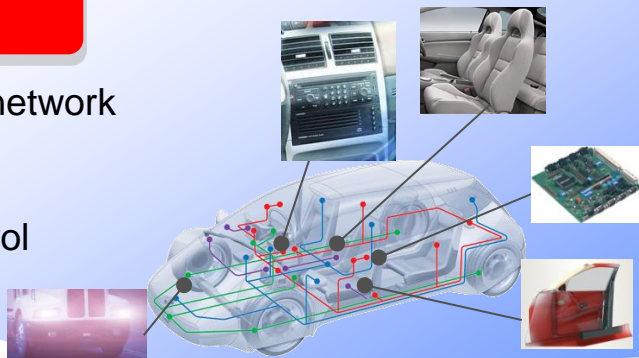
- Can be plugged into standard CMOS logic process
- No need of IP redesign
- Complete NOR function
- Faster programming speed and more flexible than OTP and MTP
- Low process cost with less mask layers



Mie Products for Automotive

Body

- Automotive network (CAN,LIN)
- MCU
- Battery control



Safety/Security

- Graphics
- mm wave radar
- Security chip
- Automotive network



Cluster

- Stepper motor control
- Graphics
- MCU



High Quality

Wide Temperature & Voltage

Customer Satisfaction

High Reliability

High Safety

Infotainment



- Graphics
- Automotive network
- MCU



- Motor control
- Functional safety
- Automotive network



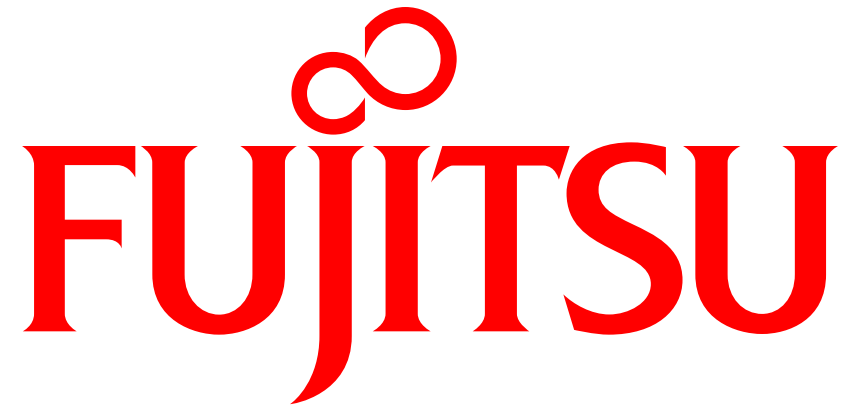
Power train/ Chassis

***Mie Fujitsu Semiconductor
will be***

“Smart Foundry for Smart Society”

***in association with
UMC***





shaping tomorrow with you